Amendments to the Claims

Claims 1-10 (Previously cancelled).

Cl

Claim ~~11~~ 1. (Currently amended): A method of forming a nitrogen-enriched region within a silicon-oxide-containing layer, comprising:

providing the silicon-oxide-containing layer over a substrate; the silicon-oxide-containing layer having a bare upper surface above the substrate and a lower surface on the substrate;

exposing the silicon-oxide-containing layer to an activated nitrogen species from a nitrogen-containing plasma to introduce nitrogen into the silicon-oxide-containing layer and form a nitrogen-enriched region, the ~~nitrogen enriched~~ nitrogen-enriched region being only in an upper half of the silicon-oxide-containing layer; and

thermally annealing the nitrogen within the nitrogen-enriched region, while the bare upper surface of the silicon-oxide-containing layer remains bare, to bond at least some of the nitrogen to silicon proximate the nitrogen; the nitrogen-enriched region remaining confined to the upper half of the silicon-oxide-containing layer during the annealing~~; the thermal annealing comprising rapid thermal processing at a ramp rate of at least about 50°C/sec to a process temperature of less than 1000°C, with the process temperature being maintained for at least about 30 seconds~~.

2. 1
Claim ~~12~~ (Currently amended): The method of claim ~~11~~ wherein the nitrogen-enriched region is formed only in the upper third of the ~~silicon-oxide~~ silicon-oxide-containing layer by the exposing.

3. 1
Claim ~~13~~ (Currently amended): The method of claim ~~11~~ wherein the nitrogen-enriched region is formed only in the upper third of the ~~silicon-oxide~~ silicon-oxide-containing layer by the exposing and remains confined to the upper third of the ~~silicon-oxide containing~~ silicon-oxide-containing layer during the annealing.

C1 Cont.

4. 1
Claim ~~14~~ (Currently amended): The method of claim ~~11~~ wherein the nitrogen-enriched region is formed only in the upper fourth of the ~~silicon-oxide~~ silicon-oxide-containing layer by the exposing and remains confined to the upper fourth of the ~~silicon-oxide containing~~ silicon-oxide-containing layer during the annealing.

5. 1
Claim ~~15~~ (Currently amended): The method of claim ~~11~~ wherein the nitrogen-enriched region is formed only in the upper fifth of the ~~silicon-oxide~~ silicon-oxide-containing layer by the exposing and remains confined to the upper fifth of the ~~silicon-oxide containing~~ silicon-oxide-containing layer during the annealing.

6. 1
Claim ~~16~~ (Currently amended): The method of claim ~~11~~ wherein the silicon-oxide-containing layer is maintained at a temperature of less than 200°C during the exposing.

7. 1

Claim ~~17~~ (Original): The method of claim ~~11~~ wherein the plasma is maintained with a power of from about 500 watts to about 5000 watts during the exposing.

8. 1

Claim ~~18~~ (Original): The method of claim ~~11~~ wherein the exposing occurs within a reactor, and wherein a pressure within the reactor is from about 5 mTorr to about 10 mTorr during the exposing.

C1 cont.

9. 1

Claim ~~19~~ (Original): The method of claim ~~11~~ wherein the exposing occurs for a time of less than or equal to about 1 minute.

Claim 20-47 (Previously cancelled)

10.

Claim ~~48~~ (Currently amended): ~~A~~ The method of ~~forming a nitrogen enriched region within a silicon oxide containing layer, comprising:~~

~~providing the silicon oxide containing layer over a substrate; the layer having an upper surface above the substrate and a lower surface on the substrate;~~

~~exposing the layer to activated nitrogen species from a nitrogen containing plasma to introduce nitrogen into the layer and form a nitrogen enriched region, the nitrogen enriched region being only in an upper half of the silicon oxide containing layer; and~~

C1 cont.

~~thermally annealing the nitrogen within the nitrogen enriched region to bond at least some of the nitrogen to silicon proximate the nitrogen; the nitrogen enriched region remaining confined to the upper half of the silicon oxide containing layer during the annealing;~~ claim ~~11~~ wherein the thermal annealing ~~comprising~~ comprises thermal processing at a temperature of about 700°C for a time of about 30 seconds.

Claim ~~49~~ 11. (Currently amended): ~~A~~ The method of ~~forming a nitrogen enriched region within a silicon oxide containing layer, comprising:~~

~~providing the silicon oxide containing layer over a substrate; the layer having an upper surface above the substrate and a lower surface on the substrate;~~

C1

~~exposing the layer to activated nitrogen species from a nitrogen containing plasma to introduce nitrogen into the layer and form a nitrogen enriched region, the nitrogen enriched region being only in an upper half of the silicon oxide containing layer; and~~

~~thermally annealing the nitrogen within the nitrogen enriched region to bond at least some of the nitrogen to silicon proximate the nitrogen; the nitrogen enriched region remaining confined to the upper half of the silicon oxide containing layer during the annealing;~~ claim ~~11~~ 1 wherein the thermal annealing ~~comprising~~ comprises thermal processing at a temperature of about 1050°C for a time of about 5 seconds.

Claim ~~50~~ 12. (New): The method of claim ~~11~~ 1 wherein the thermal annealing comprises rapid thermal processing at a ramp rate of at least about 50°C/sec to a process temperature of less than 1000°C, with the process temperature being maintained for at least about 30 seconds.